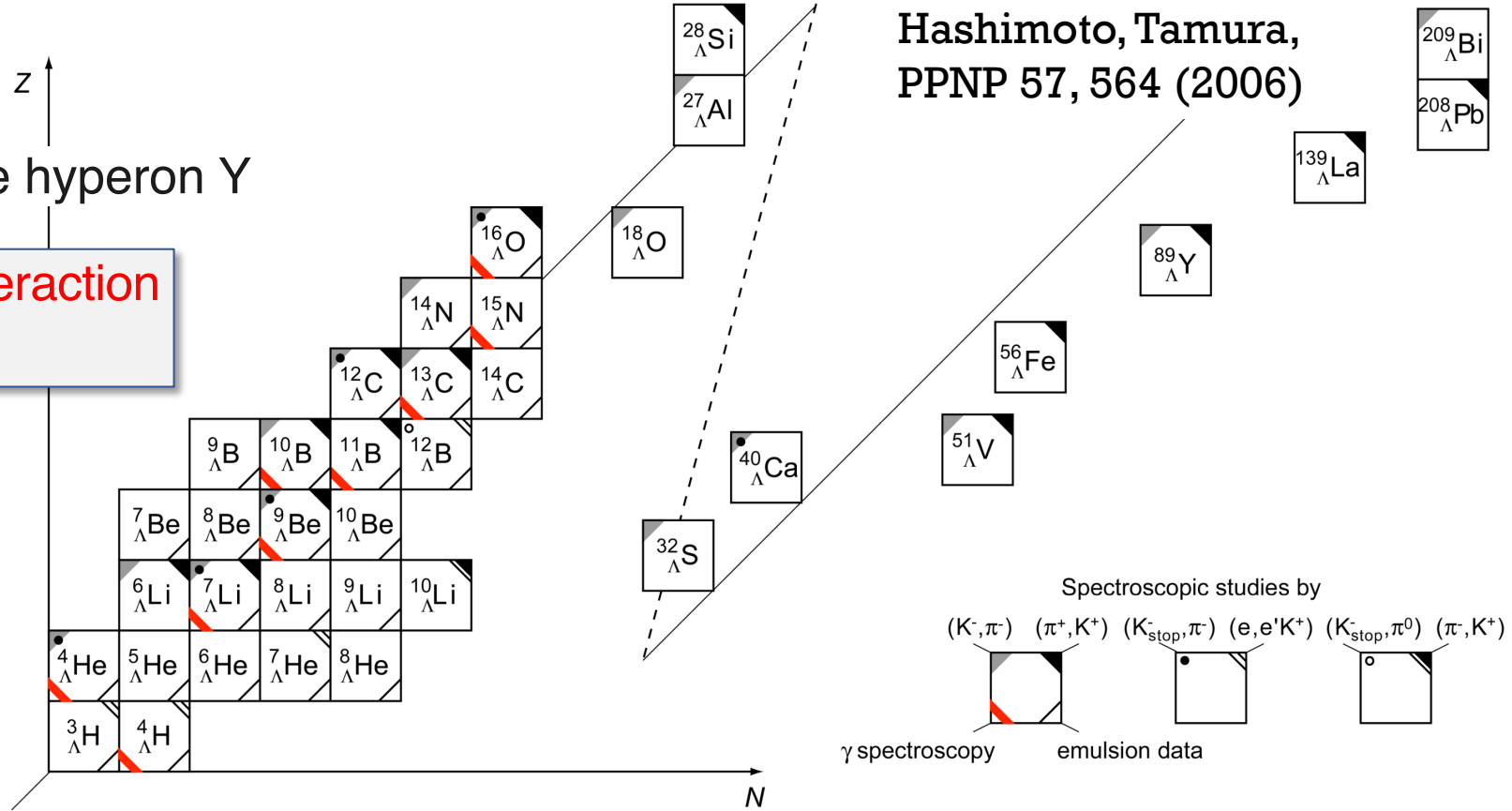
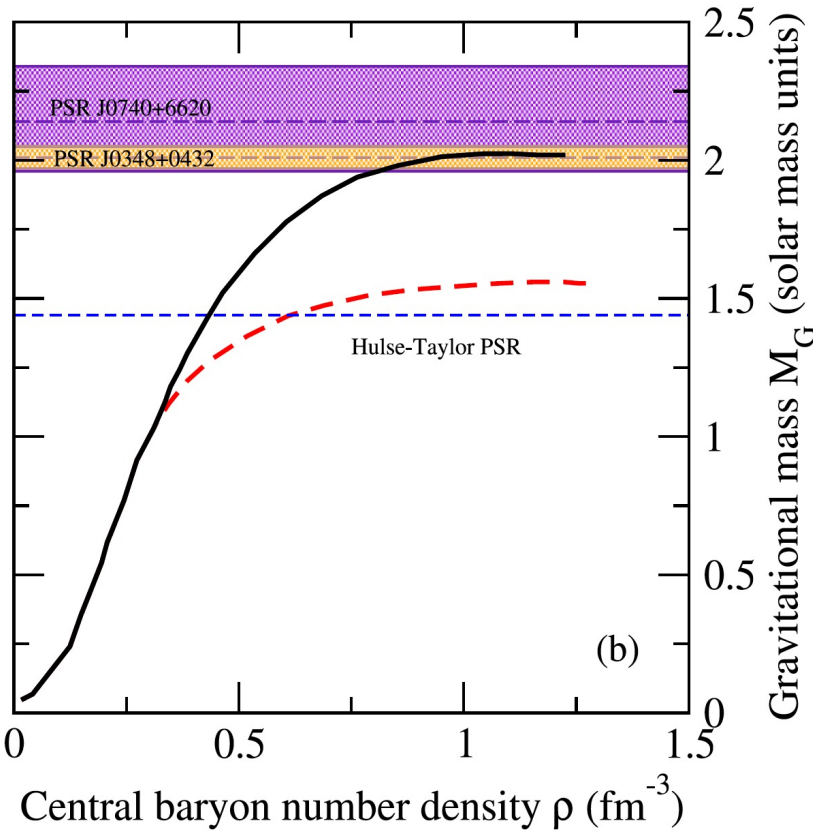


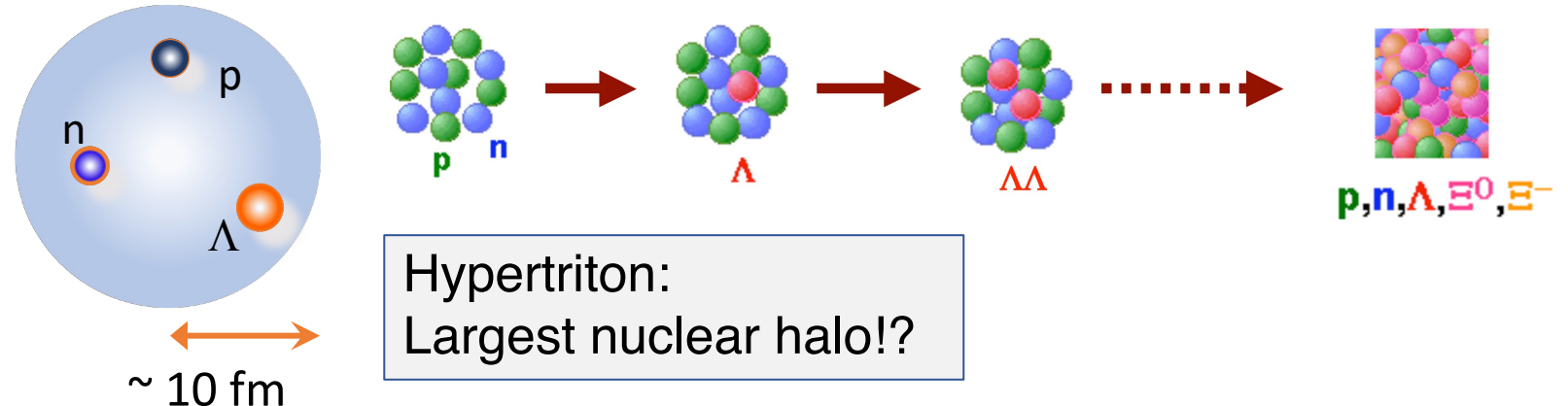
Hypernuclei

A hypernucleus contains at least one hyperon Y

Understand the YN, YY, YNN, ... interaction
Structure of multi-strange systems



Only 37 single hypernuclei known so far, with scarce information



Hypernuclei

- **More experimental and theoretical activity in the US needed**
- **Challenges:**
 - **Neutron stars with hyperons:** (a) mean field, (b) quark-meson coupling, (c) effective theory lagrangeans, (d) density dependence, (e) EOS
 - **Experimentally:** (a) low production rates, (b) short lifetime (200 ps), (c) missing mass and pion spectroscopy restricted to few hypernuclei (d) relativistic heavy-ion collisions cannot reach more than $A=4-5$
 - **Outstanding theoretical problems:** (a) YN , YY , YNN , . . . interaction, (b) hypertriton lifetime puzzle, (c) hypertriton size, (d) hypernuclei spectroscopy, (e) hyperon puzzle, . . .

Rich physics, important